

## ABSTRACT

A base station is capable of communicating in a time division duplex using code division multiple access format. The base station transmits a primary synchronization signal and secondary synchronization signals for synchronization purposes. A primary synchronization signal is transmitted in a selected time slot in a primary synchronization channel. The primary synchronization channel uses a plurality of time slots for communication. Each of a plurality of combinations of N code groups and the plurality of time slots is associated with a unique combination of secondary synchronization signals from a set of secondary synchronization signals, which does not exceed  $(\log_2 N) + 1$  in number. Selected secondary synchronization signals are transmitted out of a set of secondary synchronization signals. The selected secondary signals are associated with one of the N code groups. The one group is associated with the base station.